# Plan for RDMA-based Distributed Key-Value Store

**1. Project Structure**

- **Components**:
  1. Shared map using Shared memory implemented using Boost c++ libraries
  2. KV Manager with RPC implementations (Server, Client, Handles/Engine)
  3. RDMA integration for remote communication
  4. CMake files for building and compiling the project

- **Directory structure**:
  1. /src: Contains source code files with the components mentioned above
  2. /include: Includes necessary base class implementations or libraries
  3. /common: Configuration files, system or any general purpose files
  4. /build: Used for the executables after compilation using CMake
  5. /docs: For detailed documentation of the project
  6. /scripts: Contains scripts used to run the processes

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**2. Local and Remote Access Implementation**

- **Local Access:**
  1. Implementation of classes that allow clients to access data directly from the shared map.
  2. Shared memory access should provide efficient read/write operations for the process running on the local node.

- **Remote Access:**
  1. Implementation of RDMA procedures with RPC to handle remote access between nodes using KV manager.
  2. Set up of the necessary RDMA logic and protocols to call relevant server/client operations remotely.
  3. Ensuring that the system supports seamless remote access with minimal latency using RDMA.

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**3. Build and Configuration**

- **CMake Setup**:
  1. Using CMakeLists.txt files in respective directories to facilitate the build process.
  2. CMake for managing build dependencies and ensuring cross-platform compatibility.

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**4. GitHub Workflow**

- **Version Control**: Maintaining GitHub repository with branching workflows.
  1. Main branch: Only stable code is merged here after testing.
  2. Feature branches: For experimenting or developing new features.